



Guidelines for Selecting Chairs Used for Office Work
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PREPARED BY:

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An office chair should provide stable and comfortable support for the user's back and legs while also allowing the user to work in a variety of postures. A good chair should feel comfortable over an extended period of time and be appropriate for the task(s) being performed. Well-designed chairs will:

- Ensure that blood circulation to and in the lower legs is not restricted (a 'waterfall' or curved seat edge that is not too long helps to ensure this);
- Have adjustment controls that make it easy for the user to maintain and adjust their posture;
- Provide sufficient support for the back and spine, with specific support for the lumbar curve;
- Use fabrics on the seat cushion that have a sufficient level of friction so that the user doesn't feel like they are sliding off the seat; and,
- Use fabrics on the seat cushion and back rest that are breathable and allow air to circulate.

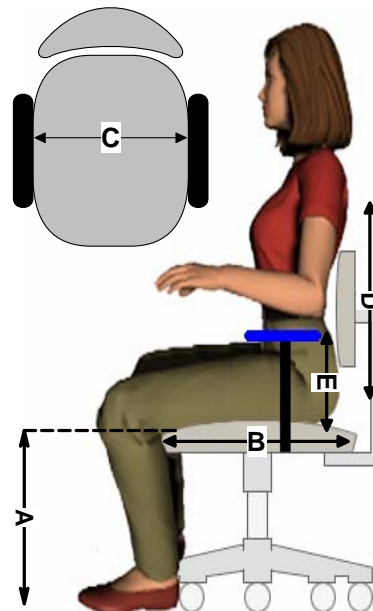
The standards referenced in this guideline are based on information in CSA-Z412 Guideline on Office Ergonomics and the ANSI/HFES 100-2007 Human Factors Engineering of Computer Workstations Standard. The specifications listed in this guideline have been developed to fit the small females and tall males. However, because of possible extremes in leg length, torso length, upper arm length, hip width, etc. chairs designed to these specifications may not provide every potential user with an optimal fit, even if all recommended adjustable design features are present. Because there are exceptions in user's sizes and shapes it is always important to find out if the chair vendor / manufacturer can accommodate for larger and smaller people. For example, make sure the vendor / manufacturer can provide seat pans with shorter depths and narrower widths in addition to longer depths and wider widths. Also, find out if the chair vendor / manufacturer can supply different height adjustable cylinders to accommodate shorter and taller people.

At a minimum, all office chairs should have the following adjustable design features:

- A. Height adjustable seat-pan;
- B. Seat-pan depth adjustability;
- C. Seat-pan must be wider than the person's hip breadth to allow for movement and clothing;
- D. Height adjustable backrest with lumbar support; and
- E. Height adjustable armrests.

Other recommended adjustable design features include:

- Width adjustable armrests
- Amount of lumbar support (in / out)
- Back rest and seat pan angle



Summary of recommended chair features, dimensions and ranges

The following information is intended to serve as a guideline to assist purchasing departments in the selection and purchasing process. While there are other parameters and features to consider when purchasing a chair, ESA believes that the following table identifies those that are critical to allowing the user to adopt, maintain and adjust their posture while interacting with their workstation. It should be noted that a good chair is not a substitute for a poorly designed workstation. A user's ability to experience a really good 'fit' with their chair depends, to a large extent, on how their workstation 'fits' them and the tasks they perform while at that workstation.

Table 1: Summary of ESA's recommended chair features, dimensions, and ranges

Chair Parameter	Feature	Recommended dimension and ranges
Seat Pan	Waterfall front edge	<ul style="list-style-type: none"> The front edge of the seat pan should be rounded and drop away slightly from the underside of the user's thighs
	Height Adjustable	<ul style="list-style-type: none"> ~38 – 56 cm (15 – 22", 14" or less for shortest) Allow the user to sit comfortably with their feet on the floor and maintain torso to thigh angles equal to or greater than 90° Provide a footrest when the range of adjustment of the chair or work surface, or both, does not permit the user's feet to be supported on the floor
	Depth Adjustable	<ul style="list-style-type: none"> ~38 – 49.5 cm (15 – 19.5", 14" or less for shortest, 21.5" or more for tallest) Allow the user to sit with their back supported by the backrest without contact between the back of the user's knee and the front edge of the seat pan (5 – 8 cm (2-3") of free space recommended)
	Width	<ul style="list-style-type: none"> ≥ 45 cm (17.7") 56 cm (22") to accommodate all but the extremes
	Angle	<ul style="list-style-type: none"> If the seat angle is adjustable independent of the backrest, a minimum of 3° forward and 3° backward
Back Rest	Height Adjustable Lumbar Support	<ul style="list-style-type: none"> Provide support to the lumbar and thoracic regions of the back Centre of support should be adjustable in height from 15 – 25 cm (5.9 – 9.8") above the compressed seat height Ideally the depth / amount of lumbar support should also be adjustable
	Width	<ul style="list-style-type: none"> ≥ 36 cm (14.2")
	Angle	<ul style="list-style-type: none"> Not force a torso angle less than 90° Allow the user to adjust the angle between the backrest and seat pan by at least 15°, between 90° - 120° Provide headrest if recline exceeds 120°
	Lock	<ul style="list-style-type: none"> The angle should be lockable at various positions within the backrest angle adjustment range <ul style="list-style-type: none"> - infinite locking position is preferred - free float is desirable
Back Angle / Chair Recline	Tension	<ul style="list-style-type: none"> Allow the user to control the resistance necessary to recline the backrest / chair

Table 1: Summary of ESA’s recommended chair features, dimensions, and ranges (cont’d)

Chair Parameter	Feature	Recommended dimension and ranges
Armrests	Height Adjustable	<ul style="list-style-type: none"> Adjustable in height Top of armrests starting at 15 cm (6”) from the top of the seat pan Can be adjusted to at or below the user’s sitting elbow height – adjustment range from 15 – 30 cm (6 – 12”) above the seat pan Top of armrests are padded
	Inside Distance Between Armrests	<ul style="list-style-type: none"> ≥ 46 cm (18.1”) to allow for easy sitting / standing 57 cm (22.5”) to accommodate almost all for easy sitting / standing Adjustable to shoulder width: 38 – 55 cm (14.9 – 21.6”) (sliding or pivoting movements) Allows the user to work with arms abducted to angles less than 20°
	Padding	<ul style="list-style-type: none"> Padded armrests – cloth or vinyl cover, foam or gel pad (gel preferred)
Chair Controls	Control Use is Labeled / Marked	<ul style="list-style-type: none"> The chair’s controls should be labeled or marked so that the user can easily see their function and understand how to use the control
	Instructions Included with Chair	<ul style="list-style-type: none"> Ideally, the instructions for how to make adjustments to the chair will be ‘with the chair’ at all times

Vendor List

Table 2 identifies some vendors in Atlantic Canada that sell chairs meeting the specifications identified in Table 1. This is by no means a complete list of all the vendors within Atlantic Canada that sell products that meet ESA’s criteria. One or several vendors in this list may have products to meet your needs. With these purchasing guidelines, you may want to conduct research into additional vendors in your area. The vendors that have been identified in Table 2 may carry additional seating brands and models that also meet the ESA criteria. It is also important to note that the guidelines and specifications provided in Table 1 should be used when any chairs being purchased will be used in a typical office environment.

Regardless of any chair that you consider, ESA strongly recommends that your staff have the opportunity to use / test the chair prior to purchasing. Before being provided with a chair to test, all staff should be instructed on how the chair’s adjustable design features work and how to adjust the chair for optimal fit and comfort. This instruction needs to be done for each and every chair being tested. Also, when bringing chairs into your workplace on a trial basis, ensure that the chairs being tested are exactly the same as the chairs you would purchase (e.g. the adjustable design features you require, the same type of cushion material and fabric, the same armrests, etc.). Staff should be allowed no less than 5 business days to test a chair before a decision is made regarding fit and comfort. Allowing staff to test chairs prior to purchase will provide an opportunity for you to identify any “special” considerations that may need to be made (i.e. deeper/smaller seat pan, increased range of adjustment of the seat pan, armrests, etc.). It is also important to understand that it is often the case that while many people may find one particular brand and model of chair to be comfortable, there will be those who do not. You should not expect that one type of chair will fit everyone and the process you use to select chairs for your workplace should ensure that a variety of chairs are considered and tested, and that special considerations are addressed before a final purchasing decision is made.

Table 2: Vendor List

Vendor	Phone	Manufacturer	Product Name
Atlantic Business Interiors	902 468 3200	Steelcase	<ul style="list-style-type: none"> • Leap • Think • Amia • Crew
Chairs Ltd	902 468 2854	Chairs Ltd	<ul style="list-style-type: none"> • Whale • Dolphin
Staples	N/A	Global	<ul style="list-style-type: none"> • Tritek ErgoSelect • Avanti • Courier • Indulge • Alero • ObusUltraForme Series • Ride
Grand & Toy	902 450 1258	Global	<ul style="list-style-type: none"> • Tritek ErgoSelect • Avanti • Courier • Indulge • Alero • ObusUltraForme Series • Ride
		Ergocentric	<ul style="list-style-type: none"> • myCentric Mid Back Multi Tilt • iCentric Mid Back Multi Tilt • GeoCentric Mid Back Multi Tilt
		Humanscale	<ul style="list-style-type: none"> • Freedom
		Teknion	<ul style="list-style-type: none"> • Contessa • Amicus • Argus • Dharma • Fitz • Metrix • Savera
Corporate Express	453-0005	Global	<ul style="list-style-type: none"> • Tritek ErgoSelect • Avanti • Courier • Indulge • Alero • ObusUltraForme Series • Ride
Office Interiors	902 422 4011	Haworth	<ul style="list-style-type: none"> • Zody • SE Improv • Improv TAG • X99
		Humanscale	<ul style="list-style-type: none"> • Freedom
Chandler Office Environments	902 450 2400	Herman Miller	<ul style="list-style-type: none"> • Embody • Aeron • Mirra • Ambi • Celle

Vendor	Phone	Manufacturer	Product Name
<i>interSPACE</i> Resource Group	902 421 2119	Knoll	<ul style="list-style-type: none"> • Life • EWC • Chadwick
Ergoworks Atlantic	902 429 1511	Teknion	<ul style="list-style-type: none"> • Contessa • Amicus • Argus • Dharma • Fitz • Metrix • Savera